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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,883	12/20/2004	Wenlin Zhang	68.0327	5296
7590	10/09/2007			
Victor H Segura Schlumberger Technology Corporation 200 Gillingham Lane Sugar Land, TX 77478			EXAMINER PATEL, TAYAN B	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 10/09/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,883	Applicant(s) ZHANG ET AL.	
	Examiner Tayan Patel, Esq.	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/20/2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Objection

1. Claims 2 and 3 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Here, claims 2 and 3 are in dependent form, yet fail to further limit another claim, rather these claims depend off themselves. The examiner has interpreted claim 2 to depend from claim 1 and claim 3 to depend from claim 2.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 1, and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin et al (US 4891115) in view of Estes et al (US 5299359).

As to claim 1, Shishkin et al discloses an apparatus for repairing pipelines and cleaning the inside of pipes from corrosive deposits (See abstract) comprising: a cleaning tool, 1, further comprising a hub, 3, carrying spring plates, 4, secured thereto, the free ends having blades the are engageable with the inner surface of the pipeline, 5 (See column 5, lines 9-29; See also figure 1); a plating apparatus (See Figure 12; See also columns 8-9, lines 66-20 - the cleaning tool has a means of forcing the inhibitor into the layer of deposits via electric current, 38, a discharge device, 39, and electrodes 40) for plating a new surface after the cleaning step (See column 9, lines 21-34 – a strong coating is formed after the corrosive deposit has been removed). However, Shishkin et al fails to disclose a corrosion monitoring too to examine the interior surface of the pipe after the new surface has been coated.

Estes et al discloses an apparatus that measures corrosion inside pipelines (See column 1, lines 22-36) a caliper logging sonde, 10 (probe that monitors corrosion in pipelines) preferably includes a plurality of upper centering arms, 20, and a plurality of lower centering arms, 22, which are utilized to centralize caliper logging sonde, 10, within borehole, 12, in a manner well known in the art comprising a plurality of sensing fingers, 24, in order to detect ovalization and/or defects within the internal dimensions of tube 58 which is suspended within borehole, 12 (See columns 3-4, lines 48-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the corrosion monitoring tool/sonde in Estes et al in the

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apparatus of Shishkin et al in order to detect ovalization and/or defects within the internal dimensions of tube 58 which is suspended within borehole, 12.

As to claim 4, Shishkin et al discloses a method for repairing pipelines and cleaning the inside of pipes from corrosive deposits (See abstract) comprising the steps of: cleaning an interior of a pipe via a cleaning tool, 1, further comprising a hub, 3, carrying spring plates, 4, secured thereto, the free ends having blades the are engageable with the inner surface of the pipeline, 5 (See column 5, lines 9-29; See also figure 1); plating a new surface inside the pipe after the cleaning step via a plating apparatus (See Figure 12; See also columns 8-9, lines 66-20 - the cleaning tool has a means of forcing the inhibitor into the layer of deposits via electric current, 38, a discharge device, 39, and electrodes 40) for plating a new surface after the cleaning step (See column 9, lines 21-34 – a strong coating is formed after the corrosive deposit has been removed). However, Shishkin et al fails to disclose a step of examining, by a corrosion monitoring too to examine the interior surface of the pipe after the new surface has been coated.

Estes et al discloses a method that measures corrosion inside pipelines (See column 1, lines 22-36) via a caliper logging sonde, 10 (probe that monitors corrosion in pipelines) preferably includes a plurality of upper centering arms, 20, and a plurality of lower centering arms, 22, which are utilized to centralize caliper logging sonde, 10, within borehole, 12, in a manner well known in the art comprising a plurality of sensing fingers, 24, in order to detect ovalization and/or defects within the internal dimensions of tube 58 which is suspended within borehole, 12 (See columns 3-4, lines 48-32).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the examining method, via a corrosion monitoring tool/sonde in Estes et al in the apparatus of Shishkin et al in order to detect ovalization and/or defects within the internal dimensions of tube 58 which is suspended within borehole, 12.

As to claim 5, modified Shishkin et al discloses all of the claimed limitations as discussed with respect to claim 4 above, wherein Estes et al further discloses the monitoring tool/sonde, 10, to repeatedly measure variations in the internal dimension of borehole tubing at a plurality of time instants (See column 6, lines 49-63).

However, modified Shishkin et al still fails to disclose the cleaning step after the monitoring step.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a cleaning step after the examining step of (a1) that reveals all the defects, primarily corrosion, in order to have a clean surface prior to coating/plating in step (b).

As to claims 6 & 7, Shishkin et al discloses a generator, 38, with electrodes, 40, that provide an electrochemical (electrolytic) plating step by forcing the inhibitor into the layer of deposits (See column 4, lines 12-20; See also figure 12; See also columns 8-9, lines 65-20).

As to claim 8, Shishkin et al discloses fluid jets on the cleaning tool so as to effect partial breakage (blasting) and removal of deposits from the inner surfaces of the

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pipeline (See column 6, lines 44-62). However, modified Shishkin et al fails to disclose a container to collect removed corroded areas.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a container to collect corroded areas after fluid jets blast the deposits in order for deposits not to re-deposit on the walls of the tube.

As to claim 9, modified Shishkin et al discloses all of the claimed limitations as discussed with respect to claim 5 above, wherein Estes et al disclose the examining steps wherein a sensing finger, 28 (Same sensing figures of claim 4, but different figure) is preferably mounted to caliper logging sonde, 10, in a manner such that sensing finger, 28, may be moved with respect to caliper logging sonde, 10, in response to variations in the internal dimensions of tube, 58, thus resulting in a longitudinal movement of sliding block 30 (See figure 2; See also columns 3-4, lines 64-12). However, modified Shishkin et al fails to disclose the generating of an electrical signal in response to the flexing step representative of said corroded area.

Estes et al discloses that the longitudinal movement will be achieved by the transmission rod, 32, which is then utilized to urge transducer rod, 36, into an out of internal chamber, 56, of thimble member, wherein the effective inductance of the coil, 46, is altered, resulting in an electrical signal which varies in response to variations in the internal dimension of tube, 58, at each of a plurality of points around the circumference of caliper logging sonde, 10 (see column 4, lines 33-45) in order to detect ovalization and/or defects within the internal dimensions of tube 58 which is suspended within borehole, 12 (See columns 3-4, lines 48-52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement generate an electrical signal in response to the flexing step in Estes et al in the apparatus of modified Shishkin et al in order to detect ovalization and/or defects within the internal dimensions of tube 58 which is suspended within borehole, 12.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin et al (US 4891115) in view of Estes et al (US 5299359) as applied to claim 1 above and further in view of Copland et al (US 4673890).

As to claim 2 and 3, modified Shishkin et al discloses all of the claimed limitations as discussed with respect to claim 1 above, wherein Shishkin et al yet fails to disclose a sealing apparatus to separate the different components of the pipe repair apparatus.

Copland et al discloses well bores (Shishkin et al discloses pipelines used in oil wells) comprising lower, 6, and upper, 8, packer sections in a bore (See figure 1; See also column 5, lines 1-10) in order to provide lockable packers so fluid is not transmitted from one compartment to another compartment (See column 5, lines 12-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the upper and lower packers in Copland et al in the apparatus of modified Shishkin et al in order to provide lo lockable packers so fluid is not transmitted from one compartment to another compartment.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shishkin et al (US 4891115) in view of Estes et al (US 5299359) as applied to claim 5 above and further in view of Hoyle et al (US 5036945).

As to claim 10, modified Shishkin et al discloses all of the claimed limitations as discussed with respect to claim 5 above, wherein Shishkin et al further discloses a method for cleaning the inner surface of a pipeline for oil/gas wells (See column 9, lines 18-23)

Hoyle et al discloses an apparatus tool for use in boreholes of oil wells (See column 1, lines 10-15) wherein a dipole transmitter, a1, transmits a dipole shear wave into the formation of the borehole, wherein the hydrophone array senses the existence of dipole shear waves, and generates output signals (the output signals are a recording of the shear waves) in order to energize the inputs of the switching network to select a monopole output when the monopole transmitter, a2, is used, and to select a dipole output when the dipole transmitter, a1, is used (modified Shishkin et al desires the most efficient output so that the fingers may relay accurate information for cleaning) (See columns 12-13, lines 40-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the shear wave propagation in Hoyle et al in the method of modified Shishkin et al in order to energize the inputs of the switching network to select a monopole output when the monopole transmitter, a2, is used, and to select a dipole output when the dipole transmitter, a1, is used.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tayan Patel, Esq. whose telephone number is (571)

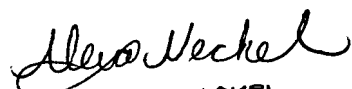
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272-9806. The examiner can normally be reached on Monday-Thursday, 8 AM-6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TBP



ALEXA D. NECKEL
SUPERVISORY PATENT EXAMINER